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DEPARTMENT OF COMMERCE

International Trade Administration

Purdue University, et al.

Notice of Decision on Application

for Duty-Free Entry of Scientific Instruments

This is a decision pursuant to Section 6(c) of the Educational, Scientific, and Cultural Materials Importation Act of 1966 (Pub. L. 89-651, as amended by Pub. L. 106-36; 80 Stat. 897; 15 CFR part 301). Related records can be viewed between 8:30 A.M. and 5:00 P.M. in Room 3720, U.S. Department of Commerce, 14th and Constitution Ave, NW, Washington, D.C.

Docket Number: 16-004. Applicant: Purdue University, West Lafayette, IN 47907. Instrument: SGR YAG pulsed laser. Manufacturer: Beamtech Optronics, Co., LTD, China. Intended Use: See notice at 81 FR 71702, October 18, 2016. Comments: None received. Decision: Approved. We know of no instruments of equivalent scientific value to the foreign instruments described below, for such purposes as this is intended to be used, that was being manufactured in the

United States at the time of order. Reasons: The instrument will be used for pulsed laser annealing and nanostructure integrated laser shock peening, to improve the microstructure of thin film for better electrical and optical properties. Requirements for the experiment include three wave lengths (355nm, 532nm, 1064 nm), pulse energy 2J, flat hat beam, and pulse duration tunable from 10ns to 25ns.

Docket Number: 16-008. Applicant: California Institute of Technology, Pasadena, CA 91125. Instrument: Cryogenic Temperature Scanning Tunneling Microscope System. Manufacturer: Unisoku Co., LTD., Japan. Intended Use: See notice at 81 FR 71703, October 18, 2016. Comments: None received. Decision: Approved. We know of no instruments of equivalent scientific value to the foreign instruments described below, for such purposes as this is intended to be used, that was being manufactured in the United States at the time of order. Reasons: The instrument will be used to investigate structural and electrical surface properties with atomic resolution at cryogenic temperatures (-459 Fahrenheit – 0.4 K) and high magnetic fields, at which conditions materials can exhibit unusual quantum properties such as topological superconductivity and fractionalization of charge carriers. Experiments to be conducted with the

instrument include mapping of the local electronic density of states of gated nanostructures by measuring current – voltage curves at different points, mapping of the electron spin structure using scanning tips made of magnetic materials, and probing the size of the energy gap in topological insulators and topological superconductors. For this type of research an instrument capable of performing scanning tunneling microscopy (STM) and atomic force microscopy (AFM) at cryogenic temperatures and high magnetic fields is essential.

Dated: June 9, 2017.

Gregory W. Campbell
Director, Subsidies Enforcement
Enforcement and Compliance

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